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1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 *Ex parte* MAKOTO YONEYA, JONG-HYUN KIM,
11 HIROSHI YOKOYAMA, and JUN YAMAMOTO
12

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14 Appeal No. 2009-013749
15 Application No. 10/070,908
16 Technology Center 2800
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19 Oral Hearing Held: July 14, 2010
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22 Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and
23 BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.
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26 APPEARANCES:
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29 ON BEHALF OF THE APPELLANT:
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1 The above-entitled matter came on for hearing on Wednesday, July
2 14, 2010, commencing at 10:02 a.m., at the U.S. Patent and Trademark
3 Office, 600 Dulany Street, Alexandria, Virginia, before Janice Salas, Notary
4 Public.

5 THE CLERK: Calendar number 9, appeal number 2009-013749,
6 Mr. Koschmieder.

7 JUDGE HAIRSTON: Do you have a business card with you?

8 MR. KOSCHMIEDER: Yes, I do.

9 JUDGE HAIRSTON: For the record.

10 MR. KOSCHMIEDER: If it pleases the Board, I'll start with some
11 comments or if you have some questions, I can start with the questions.

12 JUDGE HAIRSTON: You can begin. We don't have any questions right
13 now.

14 MR. KOSCHMIEDER: I think the situation is fairly clear in the case. We
15 have an anticipation rejection over a reference to Kim. Appellants have
16 made numerous arguments distinguishing our invention from that which is
17 disclosed in Kim. Our main argument is -- one of our claim requirements is
18 that we have interdigitated electrodes.

19 The Examiner has taken the position that devices that have an in-plane
20 switching mode apparently have interdigitated electrodes. We've submitted
21 a number of references showing that there are devices in fact having in-plane
22 switching mode that do not have interdigitated electrodes. So the purpose of
23 that evidence is to show that in fact the inherency argument should not
24 stand.

1 JUDGE BAUMEISTER: I guess, along those references, I think -- I believe
2 one of them -- I can't remember which one you pointed to and said this is
3 silent about the electrode configuration.

4 I guess the references are a little -- it's not totally clear where it says we have
5 perpendicular electrodes -- or can you pick the best one and just kind of go
6 through that reference and explain how that's not the case.

7 MR. KOSCHMIEDER: Certainly. So I'll look at what -- I believe it's
8 pronounced Jaegemalm. I'll look at that reference. I think that maybe has
9 the clearest disclosure in that regard. So if we begin -- as a matter of fact,
10 it's towards the end, so I'm looking on page -- the last page, which is page
11 1,619, the first full paragraph in the rightmost column. I'll just read it
12 quickly into the record.

13 "To conclude, we have presented a device based on electro-optic effect that
14 involves switching of the optic axis with a large component in the plane of
15 the sample, even though the electric field is applied normal to the bounding
16 surfaces."

17 So that -- Appellants contend that that is disclosure of a device having an in-
18 plane switching mode which does not require interdigitated electrodes, so --

19 JUDGE BAUMEISTER: I'm sorry. So you're saying in-plane -- I guess
20 this, as a large component, is in-plane, which makes me wonder -- I know
21 later the claim says this tilt angle of substantially zero. If we have a large
22 component that's in-plane as opposed to totally in-plane, is that the same
23 thing?

24 MR. KOSCHMIEDER: I don't know. I don't think that's come up during
25 prosecution. I don't know if I can answer the question technically.

1 "All" is not necessarily the same as "less than all," so I don't know if I can
2 answer your question.

3 I should also point out that the electrodes in the Jaegemalm -- that's spelled
4 J-A-E-G-E-M-A-L-M -- reference are described on page 16-16, and, again,
5 it's the first full paragraph in the rightmost column, and it talks about "the
6 cells used in the study were of the conventional sandwich type consisting of
7 indium tin oxide coated glass plate."

8 So the purpose of me bringing that up is to say that in fact Jaegemalm
9 discloses an in-plane switching mode but has electrodes that are not
10 interdigitated.

11 JUDGE BAUMEISTER: I get your point that the Examiner didn't establish
12 that its inherent.

13 It seems to me, though, that the Examiner is confusing the principle of
14 inherency under 102 and the principle -- or taking official notice of well-
15 known fact under 103.

16 And the Examiner had -- I realize the one reference doesn't have a good
17 date, so setting that one aside -- I guess that's the Broer -- but we still have
18 Tomioka and Held and don't really provide pretty good evidence that using
19 interdigitized electrodes for in-plane switching LCD cells was well known
20 or at least known.

21 MR. KOSCHMIEDER: It does look like at least Tomioka, T-O-M-I-O-K-
22 A, discloses a -- interdigitated electrodes, but I guess the rejection that we're
23 addressing is that based on inherency, so perhaps there can -- the Examiner
24 could make a different rejection based on Tomioka, but Tomioka on its own
25 wouldn't support the inherency argument in view of the other evidence that
26 were submitted.

1 JUDGE BAUMEISTER: And I guess my question is -- and we do have the
2 authority to make new grounds of rejection -- if -- if instead of it being an
3 inherency over Kim, if it was an obviousness over Kim saying it's silent with
4 respect to the electrodes but both Tomioka and Held provide evidence that
5 when you have in-plane switching of LCDs, the conventional way of
6 providing the electrodes was interdigitized electrodes.

7 Wouldn't -- is there any reason why that wouldn't be obvious?

8 MR. KOSCHMIEDER: It looks like the devices of Tomioka are different
9 than the device that we have. For example, we have the requirement of
10 pretilt angle and the anchoring directions being substantially zero. When I'm
11 looking at Tomioka, just having a very sort of cursory glance, it looks to me
12 that they have a pretilt angle, just judging from the figure I see on the face of
13 the patent, that's probably greater than zero degrees.

14 So there may be some merit to what you say, but I don't think it applies
15 directly to the particular device that we've claimed with, for example, the
16 pretilt angle on the anchoring directions.

17 JUDGE BAUMEISTER: Okay. So -- I mean, without the idea of bringing
18 in -- incorporating all of Tomioka or Held, but the general concept that Kim
19 has electrodes of some sort in order to work and these provide evidence with
20 respect to Kim of using interdigitized electrodes. The issue, then, would
21 really be: Does Kim teach a pretilt angle of substantially zero.

22 Is that a fair assessment?

23 MR. KOSCHMIEDER: That is -- I think that's certainly another ground for
24 distinguishing our claims from Kim. I would not go so far as to say that
25 Appellants would make any admission with respect to one would use the
26 interdigitated electrodes of Tomioka or Held in the Kim device.

1 There are other differences between the respective devices, so I can't -- I'm
2 not really prepared to address that, but it's certainly not an admission that
3 Appellants would want to make today.

4 But yes, if you'd like, we can also discuss the pretilt angle of zero degrees.

5 JUDGE BAUMEISTER: One question I have is, does your specification
6 have any objective definition for what constitutes "substantially zero" as
7 opposed to "zero"?

8 MR. KOSCHMIEDER: There is -- in one page of the specification, the
9 Applicants have distinguished certain devices based upon the
10 pretilt angle -- let me find that quickly -- and I believe that the inventive
11 devices are distinguished from prior art devices that have a pretilt angle of
12 one degree.

13 Yes, so I'm looking on page 7, and this would be the first full paragraph, and
14 there is described -- let's see. There it's described an alignment layer that has
15 a pretilt angle of at least one degree C. As I read this, it looks to me that
16 Applicants have distinguished the substantially zero from at least that
17 measure of pretilt angle.

18 JUDGE BAUMEISTER: Okay. But then going back to Kim itself, it looks
19 like instead of using the conventional silicone oxide and rubbing -- which I
20 guess they still do for one of the substrates; for the other one they're using
21 siloxane and heating it, and they talk about in figure 4, if you have a photo
22 energy above 5,000 megajoules per centimeter squared, that's useful
23 for the in-plane switching type or horizontally aligned with the crystal cell,
24 and above 5,000 it starts dropping down below pretilt angles of 10, and then
25 you get to 6,000 and it drops to zero.

1 So I guess my question is, the Examiner pointed to figure 4 and said that
2 teaches doing above 5,000, and granted, here again, this is a range issue so it
3 might be more a matter of obviousness as opposed to anticipation, but
4 doesn't Kim disclose having pretilt angles that are zero?

5 MR. KOSCHMIEDER: Well, what Kim describes in figure 4 is a particular
6 layer of the polydimethylsiloxane. Kim doesn't describe a device that
7 actually includes this particular layer of polydimethylsiloxane.

8 So as I read figure 4 in the description in the Kim reference, it's sort of a
9 general description on the properties of polydimethylsiloxane materials in
10 film form and not necessarily disclosure that in a device of Kim you would
11 include a polydimethylsiloxane layer such that all of the anchoring
12 directions would have a pretilt angle of substantially zero.

13 And I say that because if you look at, for example, figure 14 of Kim, there's
14 a number of -- let me call them manipulations or steps that the Kim layer is
15 subjected to and each -- and in these steps you see that there's always a
16 pretilt angle or there's always a portion of the layer that's masked that would
17 not -- that would protect that portion of the layer from -- let me use the word
18 erasure, that is, photoirradiation or something along those lines, to yield a
19 pretilt angle of substantially zero degrees.

20 So I guess on summary, figure 4 may disclose that you can take
21 polydimethylsiloxane, treat it to get a pretilt angle of zero degrees, but the
22 device of Kim doesn't have multiple anchoring directions, each having a
23 pretilt angle of substantially zero degrees.

24 JUDGE BAUMEISTER: Can you turn to column 5 of Kim, and starting at
25 line 21, they're discussing the -- examples of figure 4, and towards the end of
26 that paragraph they're talking about when you have the energies approaching

1 6,000 megajoules per centimeter that you can get pretilt angle -- it says,
2 "The pretilt angle exponentially decreases according to the photo energy of
3 the UV light to almost zero degrees."

4 And then in the next paragraph, "The vertical align liquid crystal cell can be
5 fabricated by adopting photo energy less than 2,000 megajoules per
6 centimeter squared and the horizontal alignment with crystal cell can be
7 fabricated by adapting photo energy more than 5,000 megajoules per
8 centimeter squared."

9 Isn't that stating that they're making these devices using the technology
10 disclosed in figure 4 and that they're making, what, pretilt angles that are at
11 least -- I guess 5,000 is probably more like 8 or 5 degrees, but it says it's
12 above 5,000. Doesn't that say that you can make them approximately zero?

13 MR. KOSCHMIEDER: Well, that's a good point. But, again, even if this is
14 disclosure suggestive of including the polydimethylsiloxane material in the
15 Kim device, the device itself is made in a manner such that you don't have
16 multiple anchoring directions each with pretilt angles substantially zero
17 degrees.

18 So even if you include this material in the Kim device, the way you make
19 the Kim device, for lack of a better word, prohibits the formation of our
20 requirement that there are multiple anchoring directions each having a pretilt
21 angle of substantially zero degrees.

22 JUDGE BAUMEISTER: Okay. I don't think I have any other questions.

23 JUDGE HAIRSTON: Is that it?

24 MR. KOSCHMIEDER: I think that basically covers the main points that
25 counsel wish to make and Appellants also.

26 JUDGE HAIRSTON: Thank you, counsel.

1 MR. KOSCHMIEDER: Thank you.

2 Whereupon, the proceedings at 10:17 a.m. were concluded.

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